

REMARKS

Claims 6-11 have been canceled. Claims 1-5 and 12-16 are pending in the application.

All claims stand rejected under 35 USC § 103(a) as obvious over Muehlradt (US 6,573,242). Claims 1-16 were also rejected as being obvious over Muehlradt, *J. Exp. Med.*, 1997, Vol. 185, No. 11, pages 1951-1958. Both of these rejections are traversed.

The claims of the present application, drawn to a method of vaccinating an animal or human in need thereof by providing the animal or human, via mucous membranes, an antigen and an adjuvant in the form of a lipopeptide or lipoprotein of the structure I (see claim 1 above). Examiner states that this use of a lipopeptide or lipoprotein of structure I is obvious over Muehlradt, since the S-(2, 3-dihydroxypropyl)-cysteine peptide (MALP-2) disclosed in Muehlradt fits structure I, and was described as a “vaccine adjuvant”. Examiner further states that it would be obvious for the skilled artisan to use substances such as those of structure I as mucosal adjuvants because “the use of mucosal adjuvants is well know in the art, yielding predictable results”. This statement is incorrect.

Muehlradt (the patent and the article) specifically teaches that MALP-2 is a macrophage stimulant (see the patent at column 2, lines 58-60). Applicant herewith provides a 37 C.F.R. § 1.132 Declaration by the joint-inventor Muehlradt showing that, contrary to the conclusion set forth in the office action, agents that are macrophage stimulants are not necessarily capable of eliciting an effective immune response, which requires dendritic cell stimulation. In particular, agents that stimulate macrophages are not necessarily effective mucosal adjuvants.

As is also established in the Declaration that the properties of MALP-2 regarding mucosal stimulation and action on dendritic cells were not discovered until well after either Muehlradt reference, and one of skill in the art would not have assumed that MALP-2 possessed these properties, based on a knowledge of Muehlradt (either reference) and extant knowledge of mucosal adjuvants. Rather, it was necessary to carry out careful experimentation in order to discover whether or not MALP-2 had these properties, and could thus be used successfully in the methods claimed herein. Thus, the methods as recited in the claims of the present invention are not obvious in view of Muehlradt (either reference).

Finally, LPS is known as a cause of septic shock. Thus, it would be viewed as quite unlikely that the same molecule will be used as an adjuvant in vaccines or therapy.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: mike@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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